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(71) Applicant: **Sun Electric UK Ltd.**
King's Lynn, Norfolk PE30 5DD (GB)

(72) Inventors:
• **Jones, Barbara Lynne**
King's Lynn, Norfolk, PE32 1RY (GB)

• **Hawkins, Marcus John**
King's Lynn, Norfolk, PE31 7LU (GB)
• **Davis, Stephen John**
King's Lynn, Norfolk PE30 4UJ (GB)
• **Stollery, David**
King's Lynn, Norfolk PE30 3LY (GB)

(74) Representative: **Archer, Philip Bruce et al**
Urquhart-Dykes & Lord
European Patent Attorneys
New Priestgate House
57 Priestgate
Peterborough Cambridgeshire PE1 1JX (GB)

(54) **Tyre condition assessment**

(57) Method and apparatus for automotive tyre condition and other article assessment is based upon radiation analysis of a rotated tyre. Analysis of reflected radiation on the basis of intensity sensing provides a measure of tread depth and sidewall profile, together with tread location and other data. By positional analysis of the tread depth locations there is provided complementary information on the tread wear pattern. Sidewall profile determination enables identification of other tyre condition factors. Tread depth and sidewall profile are

also determined by laser or other radiation line image displacement techniques and a mounting system is provided for the apparatus enabling determinations to be made without the use of a roller bed. Proper positional alignment of the wheel to the apparatus is determined by means of a reference datum derived from reflected radiation within the apparatus.

Proper defined proximity of the tyre is defined by a pair of alignment bars positioned over an optical window of the apparatus.